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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,750	10/24/2003	Shankar Pal	MSFT-2160/304750.1	2447
41505	7590	11/30/2006	EXAMINER	
WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			CHEN, TE Y	
			ART UNIT	PAPER NUMBER
			2161	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/693,750

Applicant(s)

PAL ET AL.

Examiner

Susan Y. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5-19,21 and 23-33 is/are pending in the application.
- 4a) Of the above claim(s) 10-18,31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-9, 19, 21, 23-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

This office action is in response to the amendment filed on Sept. 14, 2006.

Claims 1, 3, 5-19, 21 and 23-33, are pending for examination, claims 1, 19, 25 and 28 have been amended, claims 2, 4, 20 and 22 have been canceled, claims 10-18 and 31-33 have been withdrawn from prosecution. Applicant is reminded to cancel all non-elected claims.

***Claim Objections***

Claim 3 is objected to because of the following informalities:

As to claim 3, the claim currently depends on claim 2, however, claim 2 has been canceled, hence, the dependency of claim 3 is incorrect. Appropriate correction is required. For the purpose of expediting the prosecution of instant application, this claim will be assumed by the Office as depending on claim 1.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 5-9, 19, 21 and 23-27, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s)

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contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims 1, 19 and 25, the claimed subject matter "shredding XML values from the binary large object" is new because it is not supported by the instant specification. In order to expedite the prosecution of instant application, the new matter will be interpreted as "shredding XML values as the binary large object".

As to claims 3, 5-9, 21, 23-24 and 26-27, these claims have the same defects as their base claims, thus, are rejected for the same reason.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-30, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,584,459 issued to Chang et al. (hereinafter referred as Chang).

Claim 28:

Chang discloses the claimed method of querying a database [e.g., the XML extender database system of Fig. 1; the use of "range query" technique at col. 2, lines 64-66 & col. 3, lines 47-60; Fig(s). 2 & 4 and associated texts], comprising:

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generating an XML index by shredding XML values contained in the at least one column of XML data, wherein the XML index is generated as a node table and wherein the XML index preserves document order and structure [e.g., steps: S3-S7, Fig. 4 and associated texts; the path node structure index of Fig. 9, the B+ tree index structures of Fig. 10 and associated texts, Enablement of an XML Index section starting at col. 14 at seq., col. 15, Structure Indexed for the XML Extender section, the novel tag counting system at col. 15, lines 50-67, col. 16, line 56 – col. 17, line 21];

utilizing the XML index to perform a query [e.g., col. 18, lines 55-67];

accessing entries of the database related to the at least one XML value, wherein results of the query are returned from the database as a response to the query [e.g., col. 19, lines 1-67]; and

retaining the XML index so that subsequent queries execute faster than an initial query [e.g., the use of range query processing via the creation of B+ tree at col. 19, lines 18-67].

**Claim 29:**

In addition to the method of claim 28, Change further discloses that the database is a SQL database [e.g., col. 19, lines 60-63].

**Claim 30:**

In addition to the method of claim 28, Change further discloses that the generating an XML index comprises utilizing at least one data definition language statement [e.g., col. 19, lines 33-44].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5-9, 19, 21, 23-24 and 25-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,584,459 issued to Chang et al. (hereinafter referred as Chang) in view of U.S. Patent No. 7,096,224 issued to Murthy et al. (hereinafter referred as Murthy).

#### **Claim 1:**

Chang discloses the claimed method of retrieving XML data from a database, the method [e.g., Abstract, Col. 1, the XML extender database system of Fig. 1; the use of "range query" technique at col. 2, lines 64-66 & col. 3, lines 47-60; Fig(s). 2 & 4 and associated texts] comprising:

creating a primary table structure to hold XML data as a large object in an XML column [e.g., the steps: S2-S4 at Fig. 4 and associated texts; col. 8, Creation of the

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Abstract Data Type DB2XML section, col. 12 - col. 13, Creation of an XML table section];

creating a primary XML index relating to the primary table structure, where the primary XML index includes a node table [e.g., steps: S3-S7, Fig. 4 and associated texts; the path node structure index of Fig. 9, the B+ tree index structures of Fig. 10 and associated texts, Enablement of an XML Index section starting at col. 14 at seq.];

populating the primary table and the primary XML index, wherein the primary XML index is populated by shredding (or parsing) XML values as the large object and storing the values into the primary XML index, and wherein the XML index preserves document order and structures [e.g., steps: S8-S9, Fig. 4 and associated texts; the novel tag counting system at col. 15, lines 50-67, col. 16, line 56 – col. 17, line 21, Insertion of Data into the XML column section starting at col. 20 at seq.]; and

querying on the primary table which then uses the XML index by directing the query to a location identified in the XML index node table to satisfy the query, whereby to retrieve the XML data [e.g., steps: S10-S11, Fig. 4 and associated texts; Querying of an XML Table section starting at col. 21 at seq.];

retaining the primary table and primary XML index so that subsequent queries execute faster than an initial query [e.g., the use of range query processing via the creation of B+ tree at col. 19, lines 18-67].

Chang did not expressly disclose that the node table stored contents as binary large object.

However, Murthy discloses the claimed feature [e.g., Abstract, col. 15, Mapping XML Fragments to Lobs, col. 17, Example].

Chang and Murthy are both in the same field of endeavor to optimize the processing of XML large object data for retrieving data in the hierarchical node tables via XML data transformation using Binary tree indexing technique [e.g., Chang: col. 19, lines 50-67, Murthy: col. 19, line 66 – col. 20, line 6], therefore, it would have been obvious for an ordinary skilled person in the art at the time the invention was made to apply the well-known binary large object as taught by Murthy into Chang's invention. Because by doing so, the combined system would be upgraded with method for not only be able to process the Character Based Large Object (CLOB) but also the multi-media Binary Large Object (BLOB).

Claim 3:

In addition to the method of claim 1, the combined system of Chang and Murthy further discloses that the node table comprises a B<sup>+</sup> tree structure [e.g., Chang: col. 15, line 64-66].

Claim 5:

In addition to the method of claim 1, the combined system of Chang and Murthy further disclose that the creating a primary table structure comprises creating a structure for XML data and non-XML data [e.g., Chang: the create adt DB2XML (...) statements at col. 9, lines 1-10].



Claim 6:

In addition to the method of claim 5, the combined system of Chang and Murthy further discloses that the querying retrieves XML and non-XML data [e.g., Chang: col. 9, lines 11- col. 10, line 18].

Claim 7:

In addition to the method of claim 1, the combined system of Chang and Murthy further discloses that the method is performed by a database engine [e.g., Chang: the unit 100, Fig. 1 and associated texts].

Claim 8:

In addition to the method of claim 1, the combined system of Chang and Murthy further discloses the following:

creating a secondary XML index relating to the primary table structure and the primary XML index [e.g., Chang: the use of create index ... statements at col. 20, lines 1- 32, Fig(s) 5-6];

populating the secondary XML index [e.g., Chang: col. 19, line 50 – col. 21, line 15] ; and

querying on the primary table wherein the query utilizes the primary XML index and the secondary XML index to retrieve the XML data [e.g., Chang: col. 20, lines 33- 52].

Claim 9:

In addition to the method of claim 1, the combined system of Chang and Murthy further discloses that the querying further comprises utilizing multiple path expressions in the retrieval of the XML data [e.g., Chang: col. 15, lines 45 - col. 16, line 6].

Claim 19:

This claim incorporates substantially similar subject matter as claim 1 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 20:

This claim incorporates substantially similar subject matter as claim 2 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 21:

This claim incorporates substantially similar subject matter as claim 3 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 23:

This claim incorporates substantially similar subject matter as claim 5 in form of a machine-readable medium, hence is rejected along the same rational.

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Claim 24:

This claim incorporates substantially similar subject matter as claim 6 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 25:

Chang discloses the claimed system for performing queries on XML data, comprising:

an input device for receiving a query [e.g., the GUI tool, Fig. 2, the unit 706, Fig. 7];

a processor for executing the query [e.g., the Search Engine 180, Fig. 2, the unit 702, Fig. 7];

at least one organization of XML data [e.g., the XViewer, XSearcher, XML Parser, etc. Fig. 2, the units: 704, 708, Fig. 7];

a software structure providing an XML index of the XML data stored in a primary table as a large object wherein nodes of the XML index are organized as a B+ tree, and wherein the input XML index is populated by shredding (or parsing) XML values as large object such that the XML index preserves document order and structures [e.g., col. 7, lines 26 – col. 8, line 42, col. 15, lines 45-66, the novel tag counting system at col. 15, lines 50-67, col. 16, line 56 – col. 17, line 21, Insertion of Data into the XML column section starting at col. 20 at seq., Fig(s) 2, 4, 6, 7, 8, 10 and associated texts];  
and

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an application program which allows the processor to utilize the XML index as a tool for performing the query against the primary table wherein the query is executed and results of the query are returned in response to the query [e.g., the unit 200, Fig. 2 and associated texts].

Chang did not expressly disclose that the node table stored contents as binary large object.

However, Murthy discloses the claimed feature [e.g., Abstract, col. 15, Mapping XML Fragments to Lobs, col. 17, Example].

Chang and Murthy are both in the same field of endeavor to optimize the processing of XML large object data for retrieving data in the hierarchical node tables via XML data transformation using Binary tree indexing technique [e.g., Chang: col. 19, lines 50-67, Murthy: col. 19, line 66 – col. 20, line 6], therefore, it would have been obvious for an ordinary skilled person in the art at the time the invention was made to apply the well-known binary large object as taught by Murthy into Chang's invention. Because by doing so, the combined system would be upgraded with method for not only be able to process the Character Based Large Object (CLOB) but also the multi-media Binary Large Object (BLOB).

Claim 26:

In addition to the method of claim 25, the combined system of Chang and Murthy further discloses that the application program is database management system software and the processor executes the application program [Chang: col. 7, lines 27-52].

Claim 27:

In addition to the method of claim 25, the combined system of Chang and Murthy further discloses that the results of the query are provided for examination [e.g., Chang: the units: 122, 126, Fig. 2, the unit 718, Fig. 7].

***Response to Arguments***

Applicant's arguments with respect to newly amended claim features have been considered but are moot in view of the new ground(s) of rejection.

Furthermore, In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., shredding the XML value as a binary large object) are not recited in the rejected claim(s) 28-30. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Points of Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y. Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Susan Y Chen  
Examiner  
Art Unit 2161

November 22, 2006

*EP Lehoue*  
*Primary Examiner*